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Javit A. Drake

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EXAMINER

HODGE, ROBERT W

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments filed 12/12/07 have been fully considered but they are not persuasive. Applicants allege that none of the references either in combination or alone teach all of the limitations of the instantly claimed invention. Applicants' allegations are unfounded; the Examiner has addressed each and every limitation of the instant claims by showing applicants where in the reference said features can be found. Applicants reiterated the Examiner's grounds of rejection in their remarks, which clearly contains every limitation that applicants allege is not present. Therefore since the grounds of rejection more than adequately addresses the majority of applicants' arguments the arguments are not persuasive for reasons already made of record.

Regarding claim 1, with respect to the membrane applicants ignore the disclosure in column 9 that the ampoule walls 8 and 12 are made out of selectively permeable silicon rubber.

Regarding claim 2, silicone rubber as defined by Dow Corning (<http://www.dowcorning.com/content/rubber/silicone-rubber.asp>) is a polymer:

#### **What is silicone rubber?**

Silicone rubber is a unique synthetic elastomer made from a cross-linked polymer which is reinforced with silica. Its characteristics are such that it provides the perfect balance of mechanical and chemical properties required by many of today's most demanding applications.

Regarding claim 10 since Hockaday discloses a selectively permeable membrane it is fully capable of the function of claim 10.

The remainder of applicants arguments stem from the fact that the secondary references do not make up for the supposed deficiencies of the primary reference.

However the deficiencies that applicants are referring too have already been addressed either in the grounds of rejection or in the response to arguments above and therefore the primary reference does not contain the deficiencies that applicants allege.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the reasons to combine can be found in the motivation statements for combining references already provided to applicants in the grounds of rejection.

The Double Patenting rejection arguments have already been addressed in the Non-Final office action dated 8/14/07 and will not be reiterated herein.

For reasons established herein and already made of record the grounds of rejection will be maintained.

### ***Claim Rejections - 35 USC § 102***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 2 and 5-10 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,645,651 hereinafter Hockaday.

Hockaday teaches a fuel cartridge comprising a housing 7 with a fuel egress 4 (i.e. exit port) supported by and coupled to the housing (figures 1 and 2, column 3, lines 55-64, column 5, line 1 – column 6, line 59, column 7, lines 49-50 and column 8, line 24 – column 9, line 40). Hockaday further incorporates the fuel Ampoule of the commonly assigned U.S. Pre-Grant Publication No. 2001/0049045 by reference and that U.S. Patent No. 6,645,651 is an improvement upon said fuel ampoule by adding an additional fuel source inside of a fuel cartridge to the previously known fuel ampoule, the previous fuel ampoule of U.S. Pre-Grant Publication No. 2001/0049045 is disclosed as having the following structure; a multilayer composite vaporization membrane 8 and 9, having a cylindrical shape (figures 1 and 3), disposed about a substantial portion of an interior of the housing, that has a selective permeability to allow vaporization of liquid methanol (paragraph [0052]) (i.e. as recited in claim 5) said cartridge also containing a carbonaceous compound (paragraph [0023]), said membrane comprising silicone or silicone impregnated into fiberglass cloth or polyester film, said membrane further comprising a porous substrate made of polyurethane (paragraph [0050]) (see also paragraphs [0014]-[0056]).

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 3, 11-20, 22-30, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hockaday in view of U.S. Patent No. 5,069,793 hereinafter Kaschemekat.

Hockaday as discussed above is incorporated herein and U.S. Pre-Grant Publication No. 2001/0049045 further teaches the use of methanol-impermeable coatings on housing walls (paragraph [0041]).

Hockaday does not teach that the composite membrane has a coating of a methanol-impermeable material on one surface.

Kaschemekat teaches a spirally wound multi layer composite membrane comprising a porous substrate (i.e. web), a membrane disposed on a first surface of the substrate (i.e. microporous substrate membrane) and a coating that is a permselective polymer on the other surface of the substrate and said multi layer composite membrane can be a plurality of membranes (column 1, lines 11-52, column 10, lines 33-64 and example 1). Kaschemekat further teaches that different polymers can be chosen for their specific selectivity.

At the time of the invention it would have been obvious to one having ordinary skill in the art to form a multi layer composite membrane having a porous substrate with a membrane on one side and a methanol-impermeable coating on the opposite surface and then spirally wind said multi layer composite membrane in Hockaday as taught by Kaschemekat, in order to provide a fuel cartridge that will have a higher capacity for methanol storage and improved safety by limiting the amount of methanol that can be leaked out of the container if it should be punctured while at the same time allowing the

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right amount of fuel through the fuel egress for supply to a fuel cell. It would have also been obvious to provide multiple multi layer composite membrane in Hockaday as taught by Kaschemekat to further increase the capacity for methanol storage and improved safety of the fuel cartridge and also because it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. It would have also been obvious to use polyurethane for the membrane in Hockaday as taught by Kaschemekat in order to provide a membrane that is properly selected for its specific chemical selectivity and also since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hockaday in view of U.S. Patent No. 5,681,467 hereinafter Solie.

Hockaday as discussed above is incorporated herein.

Hockaday does not teach that the membrane has a series of folds.

Solie teaches spirally wound membrane filters that is folded into predetermined shapes dependent upon the application (figures 1 and 2 and column 3, lines 15-55).

At the time of the invention it would have been obvious to one having ordinary skill in the art to include folding the membrane of Hockaday as taught by Solie, in order to increase the overall surface area of the membrane to allow more methanol to be released and supplied to the fuel cell.

Claims 21 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hockaday in view of Kaschemekat as applied to claims 11 and 24 above, and further in view of U.S. Patent No. 6,207,369 hereinafter Wohlstadter.

Hockaday as modified by Kaschemekat does not teach that the membrane is a sintered metal coated with a polymer.

Wohlstadter teaches that filters may comprise sintered metals coated with polymer membranes (column 70, line 66 – column 71, line 4).

At the time of the invention it would have been obvious to one having ordinary skill in the art to include a sintered metal coated with a polymer as the membrane for Hockaday as modified by Kaschemekat as taught by Wohlstadter in order to increase the overall rigidity of the fuel cartridge thus making it more durable and also since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422



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F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-8, 10 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6, 8 and 12 of copending Application No. 10/664,405. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the instant invention fully encompass the scope of the claims in copending Application No. 10/664,405; the only difference is the claims in copending Application No. 10/664,405 further limit the structure by adding either a heating element or a bladder and piston arrangement.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-3, 5-8 and 10 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 6-9, 11 and 12 of copending Application No. 10/664,818. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of both applications just use different words to claim the same thing.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT HODGE whose telephone number is (571)272-2097. The examiner can normally be reached on 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. H./  
Examiner, Art Unit 1795

/Jonathan Crepeau/  
Primary Examiner, Art Unit 1795